

LONGITUDE BY THE ALTITUDE OF STARS NEAR THE PRIME VERTICAL

For use of this form, see FM 3-34.331; the proponent agency is TRADOC.

PROJECT		STATION							
LOCATION		ORGANIZATION			DATE (YYYYMMDD)				
INSTRUMENT (<i>Type and number</i>)		CHRONOMETER			APPROXIMATE ANGLE BETWEEN STAR AND POLARIS				
OBSERVER		CHRONOMETER TIME OF ANGLE READING							
COMPUTATION OF TIME									
		Star { East } West }			Star { East } West }				
Chron. Reading,	Zenith Dist.	<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>o</i>	<i>'</i>	<i>"</i>		
Refraction					+				
Corrected Z. D.= ζ									
log cos ϕ , ϕ									
log cos δ , δ									
log cos ϕ + log cos δ = log D, $\phi - \delta$									
log sin $\frac{1}{2} [\zeta + (\phi - \delta)]$, $\frac{1}{2} [\zeta + (\phi - \delta)]$									
log sin $\frac{1}{2} [\zeta - (\phi - \delta)]$, $\frac{1}{2} [\zeta - (\phi - \delta)]$									
Sum two log sines = log N									
log N - log D = log sin ² $\frac{1}{2}t$									
log sin $\frac{1}{2} t$, $\frac{1}{2} t$ (arc)		<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>		
t (time)	t (arc)								
Right ascension of star									
Sidereal time									
Chronometer reading									
Chronometer correction									
The chronometer correction is plus if the chronometer is slow, and minus if fast. Carry all angles to seconds only, all time to tenths of seconds, and all logarithms to seven decimal places.									
COMPUTATION OF LONGITUDE									
TIME OF RADIO SIGNAL				TRANSMITTING STATION					
Chronometer reading (Sid.T.)	<i>h.</i>	<i>m.</i>	<i>s.</i>	Std. time	mer.	<i>h.</i>	<i>m.</i>	<i>s.</i>	
Chronometer correction				TZC					
LST				UT					
TZC = time zone correction Longitude (λ) = GST - LST				Sid. T. at 0 ^h UT					
				Corr. (table III)					
				GST					
				LST			—		
				Longitude (λ) (arc)	<i>o</i>	<i>'</i>	<i>"</i>	Longitude (λ)	
COMPUTED BY		DATE (YYYYMMDD)		CHECKED BY			DATE (YYYYMMDD)		